

What Is Claimed Is:

1. A layered sensor element (10), in particular for detecting a physical variable of a measuring gas, preferably for detecting the temperature of the measuring gas or the concentration of a gas component of the measuring gas, having a heater printed conductor (41), situated in a layer plane of the sensor element (10), which includes a heater (41a) and a heater lead (41b) and which is embedded in an insulation (43, 43a, 43b), the insulation (43, 43a, 43b) in the layer plane of the heater printed conductor (41) being surrounded by a sealing frame (44, 44a, 44b) at least in some areas,

wherein the extension of the sealing frame (44, 44b) in the direction parallel to a layer plane of the sensor element (10) and perpendicular to the longitudinal axis of the sensor element (10) at least in some areas amounts to at least 25 percent of the extension of the sensor element (10) in this direction.

2. The sensor element as recited in Claim 1,
wherein the extension of the sealing frame (44, 44b) in the direction parallel to the layer plane of the sensor element (10) and perpendicular to the longitudinal axis of the sensor element (10) is in the range of 30 percent to 80 percent of the extension of the sensor element (10) in this direction.

3. The sensor element as recited in Claim 1 or 2,
wherein the sealing frame (44, 44a, 44b) has a solid electrolyte, preferably zirconium oxide stabilized by yttrium oxide.

4. The sensor element as recited in one of the preceding claims,
wherein the sealing frame (44, 44a, 44b), the insulation (43, 43a, 43b), and the heater printed conductor (41) are situated between a first and a second solid electrolyte film (21, 22), and the sealing frame (44, 44a, 44b) surrounds the insulation (43, 43a, 43b) and extends to the outside surface of the sensor element (10).

5. The sensor element as recited in one of the preceding claims,

wherein the heater printed conductor (41) has the heater (41a) in a measuring area (15) of the sensor element (10), and the heater leads (41b) leading to the heater (41a) in a feed area (16) of the sensor element (10).

6. The sensor element as recited in Claim 5, wherein the extension of the sealing frame (44, 44b) in the direction parallel to the layer plane of the sensor element (10) and perpendicular to the longitudinal axis of the sensor element (10) in the feed area (16) amounts to at least 25 percent, preferably 30 percent to 80 percent of the extension of the sensor element (10) in this direction.

7. The sensor element as recited in one of the preceding claims, wherein the leads (41b) are situated in different layer planes of the sensor element (10).

8. The sensor element as recited in one of the preceding claims, wherein the insulation (43) has a higher porosity than the sealing frame (44) and/or the sealing frame (44) is gas-tight.

9. The sensor element as recited in one of the preceding claims, wherein the layer thickness of the sealing frame (44) and the heater printed conductor (41) having insulation (43) is in the range of 52 μm to 74 μm , in particular 60 μm .

10. The sensor element as recited in one of the preceding claims, wherein the sensor element (10) contains at least one electrochemical cell having a first electrode (31) and a second electrode (32) as well as a solid electrolyte (23) situated between the first and the second electrode (31, 32), a reference gas space (35), which contains a reference gas and in which the first electrode (31) is situated, being incorporated into the sensor element (10).

11. The sensor element as recited in one of the preceding claims, wherein the sealing frame (44, 44a, 44b) contains an admixture of silicon oxide of 0.1 percent to 1.0 percent by weight, preferably 0.5 percent by weight.